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Claims 1-24 were rejected under 35 U.S.C. §102 as being anticipated by  
Armstrong et al (U.S. Patent No. 5,542,047).

Armstrong describes a distributed network monitoring system for monitoring node and link status. The exemplary distributed monitoring system distributes the monitor function of determining the status of the nodes and the communication (comm.) links for those nodes. (Armstrong, col. 4, lines 55-57). Armstrong describes the node monitoring function as follows:

“... When a node is brought on-line, the node monitor software 20 is loaded, and handles all tasks associated with implementing the monitor function for that node. The principal function ... is the circulation and maintenance of a circulating status table (CST) – each on-line node receiving the CST writes its status into the CST and reads the status of all other nodes from the CST...”  
(Armstrong, col. 4 lines 62 – col. 5 lines 2)

“... node monitor software 20 ... comprises two principal tasks... a CST server task 23 and a node monitor task 24... the server task generally implements the circulation of the CST, including updating the status of its node and its comm. Links. The monitor task operates independent of the CST in performing various background communication functions associated with maintaining the CST, including polling off-line nodes and notifying the server task and notifying the server task when a node has been brought on-line...” (Armstrong, col. 5 lines 10 – 26)

... The packet manager task receives unsolicited message packets, of which CST-type packets are directed into the monitor region. The CST is received as an unsolicited message, and in addition, the packet manager task occasionally receives unsolicited boomerang messages from other monitor tasks to test individual links...” (Armstrong, col. 5 lines 36-42)

“... The monitor software running in each on-line node is responsible for indicating that a node has changed node status ... In the on-line nodes, the node monitor tasks *routinely poll all nodes listed as off-line in the CST... At each on-line node, during regular one minute polling intervals*, the node monitor task transmits a polling packet to each of the off-line nodes between itself and the on-line node... These unsolicited boomerang packets will be received by the packet manager task of the destination node if that node is on-line...” Armstrong col. 9 lines 58 – col. 10 lines 5.

“... Link Status Monitoring ... In each node, the node monitor task is responsible for determining link status for the network communications link(s) over which a node will attempt to communicate... This link monitor function is *performed continuously, independent of the operation of the CST server task... During regular link monitoring intervals (such as one second)*, the node monitor task attempts to communicate over each link to any other on-line node in the system for which that link is operational...”

Accordingly, it would appear that Armstrong describes a link and node monitoring status that *regularly and periodically* checks node and link status.

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Independent Claim 1:

Applicants' claim 1 is patentably distinct over Armstrong, which neither describes nor suggests "...a method for sending keep-alive messages by a node to a neighbor ... comprising ... determining a reliability factor for communicating with a neighbor; and ... *determining a frequency for sending keep-alive messages to the neighbor based upon the reliability factor...*"

In contrast, as cited above, Armstrong teaches only that neighbors are "routinely polled" for node status information, or "continuously" monitored at "regular link monitoring intervals (such as one second)..." No teaching or suggestion of varying the frequency of keep-alive messages in response to any reliability analysis performed by the node is either shown, suggested or inferred by Armstrong.

The Examiner has cited various sections of the Armstrong reference as teaching these claimed elements. For example, the Examiner refers Applicant to columns 2 and 3 of Armstrong as teaching the limitations of claim 1. After careful review of that passage, as well as the entire Armstrong reference, Applicants respectfully traverse the Examiner's rejection. The passage cited by the Examiner talks only about the status information contained in the CST, and discusses intermittent link voting procedures, neither of which teach or describe the claimed invention. Rather, Applicants note that, like every teaching of Armstrong, the voting procedures are even described as "predetermined intervals (such as every minute)" (col. 3 lines 5-7).

In order to support a rejection under 35 U.S.C. §102, each and every limitation of the claims must be shown or suggested by the references. For at least the reason that Armstrong fails to teach, describe or suggest "... *determining a frequency for sending keep-alive messages to the neighbor based upon the reliability factor...*", Claim 1 is patentably distinct over the references and therefore the rejection should be withdrawn.

Independent claims 8, 15 and 22:

The remaining independent claims include limitations similar to those recited in claim 1. For example, independent claims 8 and 15 include the limitation of "...frequency determination logic responsive to the reliability determination logic and operably coupled to determine a frequency for sending keep-alive messages to the neighbor based upon the reliability factor ..." Independent claim 22 recites the

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limitation of "...and wherein the node is operably coupled to determine the frequency for sending keep-alive messages to the neighbor based upon a reliability factor for communicating with the neighbor over the communication link..." Accordingly, for reasons similar to those put forth with regard to claim 1, claims 8, 15 and 22 are similarly in condition for allowance.

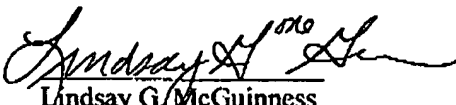
Dependent claims 2-7, 9-14, 16-21 and 23-24:

The dependent claims of the present case serve to further limit their associated parent claims, and are therefore allowable for at least the reasons put forth with regard to the parent claims.

Conclusion

Accordingly, in view of the above remarks, Applicant submits that claims 1-25 are in condition for allowance. A notice to this affect is requested. If the Examiner believes that there are still issues to be addressed with regard to the patentability of the claims, he is invited to contact Applicant's attorney at the below listed number.

Respectfully Submitted,



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